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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/555,140	08/03/2000	Gunnar-Marcel Klein	178/48916	3885

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 10/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/555,140

Applicant(s)

KLEIN ET AL.

Examiner

Matthew O Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13, 15-22 and 25-36 is/are pending in the application.
- 4a) Of the above claim(s) 25-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 13, 15-22, 35, and 36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP j 608.01(0). Correction of the following is required: The limitation "the discharge layer is comprised of a predominantly cellulose containing filter paper" recited in claim 13 lacks antecedence in the specification.

Claim 36 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

The limitation of the discharge layer having a weight per unit area of "at least about 50 g/m²" recited in claim 36 includes values above 200 g/m² and is considered new matter,

Claims 13, 15-22, 35, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 13 and 35, it is unclear as to what range "about" implies.

Concerning claim 36, it is unclear as to what range "least about" implies.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 15-17, 21, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Togashi et al.

With respect to claims 13, 35, and 36, Kadoya discloses a filter element (see FIGS. 1-6) having a plurality of layers 5, 2 joined together (e.g., by thermal fusing, see lines 1-4 of col. 3), the successive layers in the flow direction exhibiting an increasing degree of separation and a decreasing degree of storage capacity (e.g., with respect to larger diameter particles, see lines 5-38 of col. 3), the inflow layer 5 being comprised of synthetic fibers of a non-woven web (e.g., rayon and polyester, see lines 67-68 of col. 2) and the discharge layer 2 being comprised of a predominantly cellulose containing filter paper (e.g., linter and pulp, see lines 65-66 of col. 2), the filter paper layer being considered "compressed" since it has a higher density than that of the other layers and/or because paper is made by a compression process, the layers having surface weights that lie within applicant's claimed range (see the thickness values and density values disclosed in col. 3 lines 5-14, and lines 45-64). Kadoya fails to specify the non-woven web as being "melt-blown" with a fiber diameter of about 2 microns or less.

Sabee discloses an analogous non woven fabric (e.g., composed of rayon and polyester, see lines 25-65 of col. 7) formed by a melt blowing process (see lines 14-63 of col. 6) having a fiber diameter of 2 microns or less (see line 11 of col. 15) and

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suggests that such a fabric has a uniform porosity and is suitable for use as a filter medium (see from line 55 of col. 5 to line 14 of col. 6). It would have been obvious to have modified the filter of Kadoya so as to have included a melt-blown non woven web as suggested by Sabee in order to provide a web having a uniform porosity. Alternately, as best understood, Togashi et al disclose the concept of using an inflow layer formed of a melt blown non woven web positioned upstream of a discharge layer formed of a finer filter medium and suggests that such an arrangement increases the dust holding capacity of the filter. It would have been obvious to have modified the filter of Kadoya so as to have included an inflow layer formed of a melt blown non woven web as suggested by Togashi et al in order to improve the dust holding (capacity of the filter

As to claim 15, Kadoya discloses at least three medium layers joined together as recited in the claim (see FIGS. 3-6).

Regarding claim 16, Kadoya discloses an intermediate medium layer 5b (see FIGS. 3-6) that is considered compressed with respect to the inflow side layer 5a since it has a higher density than that of the inflow side layer 5a (see lines 56-57 of col. 3), and Sabee discloses a melt blow non-woven web.

Concerning claim 17, Kadoya discloses a star folded filter element (see FIG. 7).

Regarding claim 21, Kadoya discloses a cellulose containing filter layer including up to but not including 50% synthetic fibers (e.g., 15% rayon fibers, see lines 65-68 of col. 2).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

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Kadoya in view of Sabee or Tagashi et al as applied to claim 13 above, and further in view of applicant's admission on lines 17-33 of page 10 of the appeal brief filed on 11-22-02.

Kadoya discloses the filter medium as being folded to form pleats as recited in claim 11 (see FIGS. 7-9). Kadoya, Sabee, and Tagashi et al fail to disclose the layers of filter medium as being welded together by ultrasound as recited in claim 18, the layers of filter media being joined together by surface pressure by a folding process as recited in claim 19, or the layers of filter media as being adhesively bonded together by gluing with a powdered adhesive or with a hot melt impregnating agent as recited in claim 20, however, applicant admits that such arrangements are well known in the art on lines 17-33 of page 10 of the appeal brief filed on 11-22-02. Accordingly, it would have been obvious to have modified the filter suggested by Kadoya and Sabee so as to have included the well known bonding arrangements recited in claims 18-20 in order to facilitate construction of the filter utilizing joining techniques that were well known in the

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kadoya in view of Sabee or Togashi et al as applied to claim 21 above, and further in view of EP 338,479 to Klimmek et al.

Kadoya, Sebee, and Togashi et al fail to specify the cellulose containing filter layer as including glass fibers, Klimmek et al disclose an analogous filter that includes a filter paper support layer including glass fibers and suggests that the fibers increase the strength of the filter paper layer. It would have been obvious to have modified the

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cellulose containing layer suggested by Kadoya so as to have included glass fibers as suggested by Klimmek et al order to increase the strength of the paper layer.

Response to applicant's arguments filed 12-23-03.

The objection to the specification is being maintained the common dictionary definition of "predominantly" recited in the claims conflicts with the teaching of "50%" as disclosed in the specification.

The new matter rejection is being maintained since the specification fails to teach a surface weight of any higher than "about 200".

The rejection of claim 15 as being redundant has been withdrawn since claim 15 recites "at least three" whereas claim 13 recites "a plurality" and covers two or more layers.

The indefiniteness rejections concerning the term "predominantly" have been maintained since applicant's argued definition of "50% or more" conflicts with the common dictionary meaning of the term.

The indefiniteness rejections regarding the definition of "compressed" has been withdrawn in view of applicant's comment that the term covers any filter paper that has been compressed during the manufacturing process.

The indefinite rejections concerning the term "about" is being maintained since applicant has not specified the associated range in the specification.

The rejections indefiniteness rejections concerning the term "degree of separation" and "storage capacity" have been withdrawn. It is noted that the

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specification equates the phrase "degree of separation" with "filter fineness" which relates to the pore size of the filter material (see the third paragraph of page 1, and the second full paragraph of page 3). Likewise, the specification also equates the phrase "contaminant holding capacity" with "storage capacity", both terms clearly relating to the volume for collecting particulate matter.

Applicant argues that Sabee fails to disclose a fiber diameter of about 2 microns or less, however, Sabee discloses a fiber diameter range of .5 to 10 microns of which encompasses applicant's claimed range.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is (571) 272-1146. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Matthew O Savage
Primary Examiner
Art Unit 1724

mos
October 8, 2004